10054155-012202

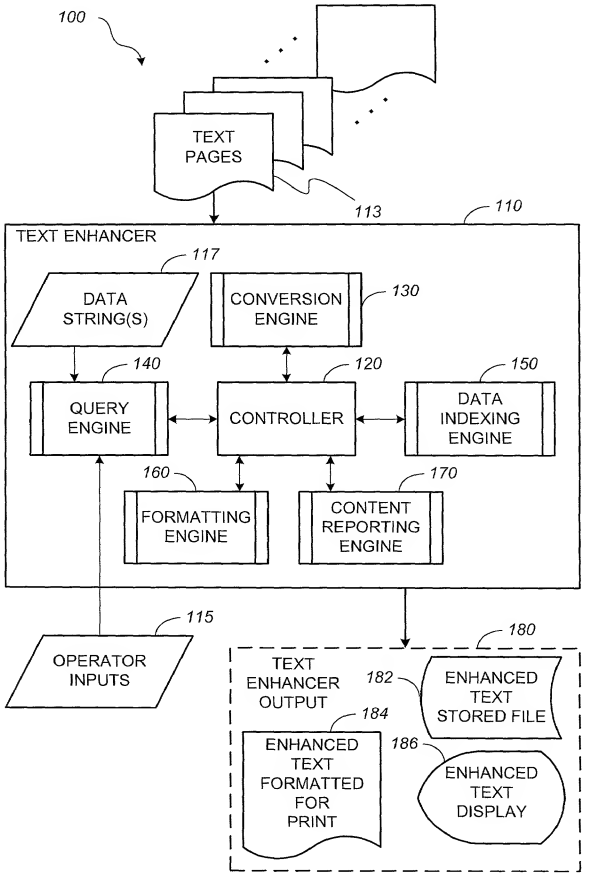

FIG. 1

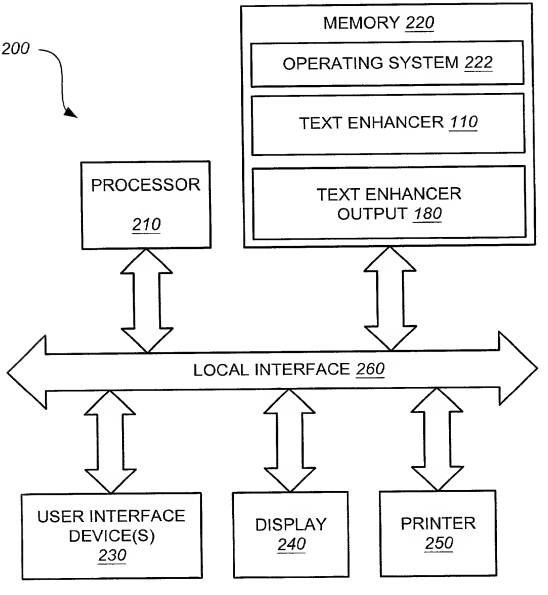

FIG. 2

20021122.0154.10011309

10051155-012202

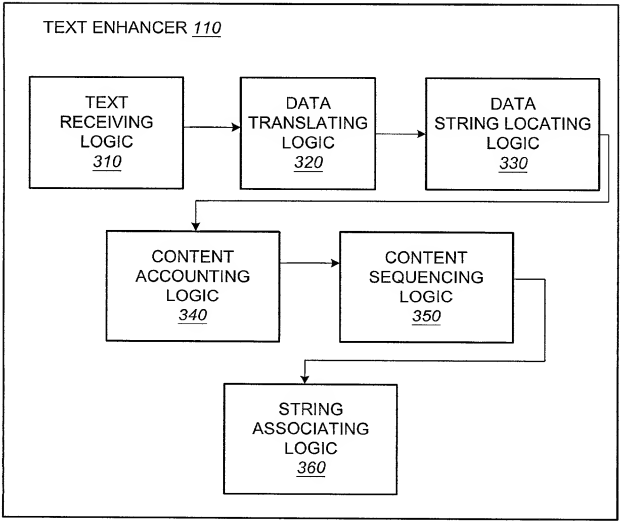

FIG. 3

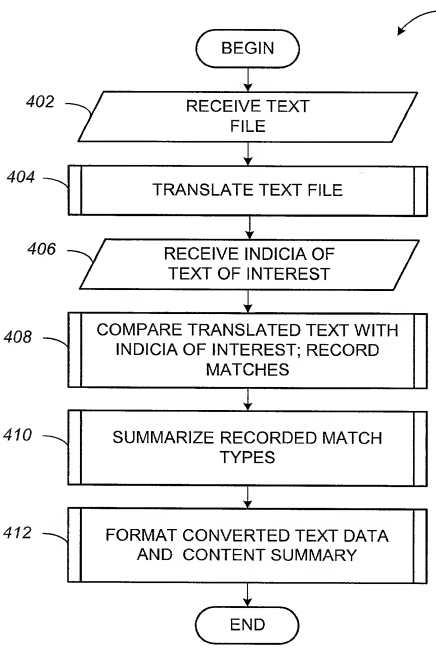

FIG. 4

20220104 1005415 01

113a

```
Checking tokens in file c:\5dx\ndf\7OFD1JL\PANEL.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\PACKAGE.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\LANDPAT.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\PADGEOM.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\ALGSLICE.NDF.
Checking tokens in file C:\5DX\5dx\IAS\FAMALGNM.DAT.
Checking tokens in file c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\ALGO_VER.NDF.
Could not open c:\5dx\ndf\7OFD1JL\ALGO_VER.NDF
Panel name = FAMILIES_ALL_RLV
NDF path  = C:\5DX\NDF\
RTF path  = C:\5DX\RTF\
IAS path  = C:\5DX\5dx\IAS\
CALIB path = C:\5DX\5dx\CALIB\
Deleting RTF Panel file c:\5dx\rtf\7OFD1JL\PANEL.RTF
Deleting Board RTF: c:\5dx\rtf\7OFD1JL\BOARD.RTF
Opening file = C:\5DX\5dx\IAS\FAMALGNM.DAT (Algorithm families)
Opening file = c:\5dx\ndf\7OFD1JL\ALGO_VER.NDF (Algorithm versions)
Cannot open c:\5dx\ndf\7OFD1JL\ALGO_VER.NDF
Using most recent version for all families.
Opening file = C:\5DX\5dx\IAS\XMAPMETH.DAT (Board Thickness Techniques)
Opening file = c:\5dx\ndf\7OFD1JL\ALGSLICE.NDF (Algorithms and slice heights)
Opening file = c:\5dx\ndf\7OFD1JL\PANEL.NDF (panel)
Board material identifier = 6337_Cu (default)
Panel rotation = 90
Stage speed = 2
Panel Dimensions:  dx = 5874,  dy = 11399,  dz = 81
WARNING:  illegal character . in board identifier 5064_8726.7_A
WARNING:  illegal character . in board identifier 5064_8726.7_B
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF (Fov data)
Default minimum margin = 0
Opening file = C:\5DX\5dx\CALIB\SCRNMAP.400 (Screen Distortion Map)
WARNING: Cannot open screen distortion map file C:\5DX\5dx\CALIB\
SCRNMAP.400
Will assume there is zero screen distortion for this FOV.
Opening file = C:\5DX\5dx\CALIB\SCRNMAP.650 (Screen Distortion Map)
WARNING: Cannot open screen distortion map file C:\5DX\5dx\CALIB\
SCRNMAP.650
Will assume there is zero screen distortion for this FOV.
Opening file = C:\5DX\5dx\CALIB\SCRNMAP.800 (Screen Distortion Map)
```


FIG. 5A

20220155041 A1 2022-05-19

113b

```
WARNING: Cannot open screen distortion map file C:\5DX\5dx\CALIB\
SCRNMAP.800
Will assume there is zero screen distortion for this FOV.
FOV bank 1:  xfov =  400.0,  yfov =  400.0
FOV bank 2:  xfov =  650.0,  yfov =  650.0
FOV bank 3:  xfov =  800.0,  yfov =  800.0
Number of board names = 2

Output board name = 5064_8726.7_A,180,BTM,5064_8726.7_B,270,0,0

About to process board = 5064_8726.7_B
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\CAMERA.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\SURFMAP.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\FOV_DATA.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JSAD8L\FOV_DATA.NDF
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\COMPONEN.NDF (component)
Number of component names = 449
Number of package names = 13
There are 449 loaded components.
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF (board)
BOARD DIMENSIONS:  dx = 5874,  dy = 11399,  dz = 81
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\PACKAGE.NDF (package)
Number of pin names = 324
Number of pintype names = 20
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\LANDPAT.NDF (land pattern)
Checking for SM components
checking for SM pads
Opening file = c:\5dx\ndf\7OFD1JL\PADGEOM.NDF (pad geometry)
Checking for TH components
checking for TH pads

About to process board = 5064_8726.7_A
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\CAMERA.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\SURFMAP.NDF.
```


20220215141051

FIG. 5B

113c

```
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\COMPONEN.NDF (component)
Number of component names = 738
Number of package names = 51
There are 289 loaded components.
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (board)
BOARD DIMENSIONS:  dx = 11399,  dy = 5874,  dz = 81
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\PACKAGE.NDF (package)
Number of pin names = 324
Number of pintype names = 20
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\LANDPAT.NDF (land pattern)
Checking for SM components
checking for SM pads
Opening file = c:\5dx\ndf\7OFD1JL\PADGEOM.NDF (pad geometry)
Checking for TH components
checking for TH pads
Removing existing board thickness file c:\5dx\rtf\7OFD1JL\1IRR58FO\
BRDTHICK.RTF
Setting pad orientations
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF (Board Alignment)
Align 1 is undefined.
Align 2 is undefined.
Align 3 is undefined.
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\CAMERA.NDF (camera index)
Default FG index = 1
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF (noise reduction)
Default noise reduction count = 0
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\EXCLZONE.NDF (exclusion zone)
File c:\5dx\ndf\7OFD1JL\1JSAD8L\EXCLZONE.NDF does not exist.

Setting pad orientations
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (Board Alignment)
```


FIG. 5C

20021015 1005455

113d

```
Align 1 component/pin = U18   52
Align 2 component/pin = U10   40
Align 3 component/pin = U7   52
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\CAMERA.NDF (camera index)
Default FG index = 1
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF (noise reduction)
Default noise reduction count = 0
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\EXCLZONE.NDF (exclusion zone)
File c:\5dx\ndf\7OFD1JL\1JRAC8K\EXCLZONE.NDF does not exist.

About to sort 449 components
About to sort 289 components
Opening file = c:\5dx\ndf\7OFD1JL\ALGSLICE.NDF (sliceHeights)
Creating max subtypes file = c:\5dx\rtf\7OFD1JL\1JRAC8K\ALGO_CFG.RTF
Making views.  Using PAD BASED MERGING.
Making views.  Using PAD BASED MERGING.
alignment view #1 : U18 (52) : U18 (53)
alignment view #2 : U10 (40) : U10 (41)
alignment view #3 : U7 (52) : U7 (53)
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (Thickness Pads)
Sorting views into inspection path
   FOV index = 2, Resolution = 1024 pixels
about to sort 12 views.
number of untwist passes =   2
   FOV index = 3, Resolution = 1024 pixels
about to sort 208 views.
number of untwist passes =   5
Creating sorted joint xref file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SJN_XREF.RTF
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\SURFMAP.NDF (surface map)
Sorting views into inspection path
   FOV index = 1, Resolution = 512 pixels
about to sort 42 views.
number of untwist passes =   3
Number of surface map points = 42
number of lines = 861
Number of lines in array = 861
Done sorting lines
Number of lines in triangles = 114
Number of triangles = 73
```

Page 4

FIG. 5D

20220504.1505 - 10011309-1

113e

```
Triangle limit angle =  10.0 degrees
Number of processed triangles = 63
Creating slice algs file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SLICEALG.RTF
Creating algorithm file  = c:\5dx\rtf\7OFD1JL\1IRR58FO\ALGOLIST.RTF
Creating view heights file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SLICE_ZS.RTF
creating report file = c:\5dx\rtf\7OFD1JL\1IRR58FO\ALGO_RPT.RTF
creating view file    = c:\5dx\rtf\7OFD1JL\1IRR58FO\VIEWLIST.RTF
creating subview file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SUBVIEWS.RTF
creating joint file   = c:\5dx\rtf\7OFD1JL\1IRR58FO\JOINTLST.RTF
Writing file c:\5dx\rtf\7OFD1JL\1IRR58FO\DEV_LIST.RTF by component
Writing file c:\5dx\rtf\7OFD1JL\1IRR58FO\DEV_LIST.RTF by view
Attempting to open file = c:\5dx\rtf\7OFD1JL\BOARD.RTF
Creating surface map file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SURF_MAP.RTF
Creating fov cross reference file = c:\5dx\rtf\7OFD1JL\1IRR58FO\FOV_XREF.RTF
Setting RPTCAD Theta: Panel 90
Setting RPTCAD Theta: Board 180
Setting RPTCAD Theta: Final 270
Creating RPTCAD File: c:\5dx\rtf\7OFD1JL\1IRR58FO\RPTCAD.RTF

This is a DOUBLE sided board.

There are  169 views with 1 slice.
There are   51 views with 2 slices.

FOV      #Views   #Slices  #Joints
---      ------   -------  ------
650.0       12       12      416
800.0      208      259     4314
         ------   -------  ------
TOTAL      220      271     4730

Creating alignment joint file      = c:\5dx\rtf\7OFD1JL\ALIGNPAD.RTF
Creating alignment view file       = c:\5dx\rtf\7OFD1JL\ALIGNVEW.RTF
Creating alignment view index file = c:\5dx\rtf\7OFD1JL\MAT_INFO.RTF
Creating panel file = c:\5dx\rtf\7OFD1JL\PANEL.RTF
CADTRAN: done.  5 warnings. 0 Unused Surface Map Points.
```


20021455 - 01202

FIG. 5E

20020705141005

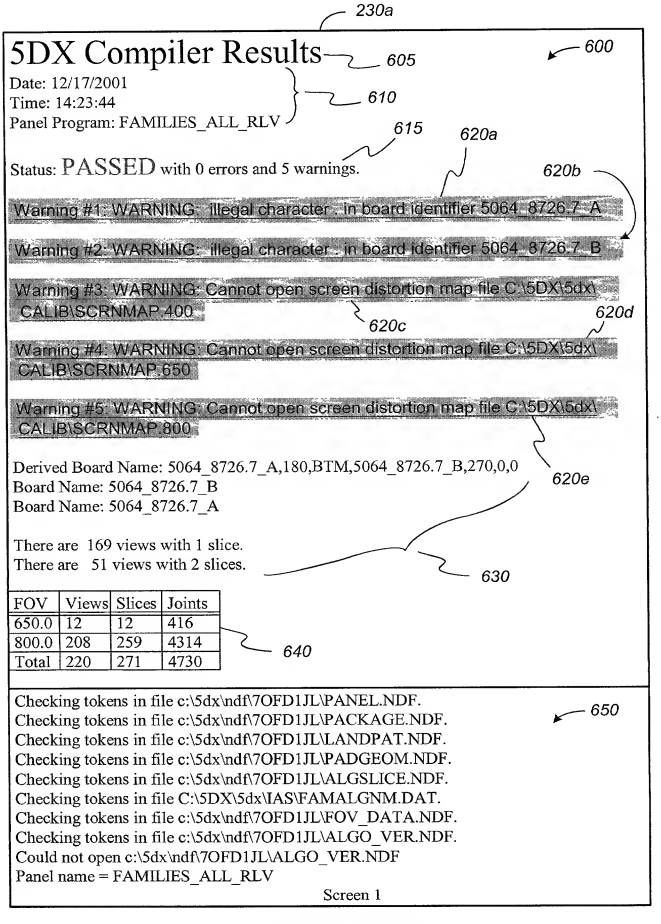

FIG. 6A

20220-0521-10011309-1

FIG. 6B

230c

650

```
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\CAMERA.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\SURFMAP.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JSAD8L\FOV_DATA.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JSAD8L\FOV_DATA.NDF
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\COMPONEN.NDF (component)
Number of component names = 449
Number of package names = 13
There are 449 loaded components.
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF (board)
BOARD DIMENSIONS:  dx = 5874,  dy = 11399,  dz = 81
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\PACKAGE.NDF (package)
Number of pin names = 324
Number of pintype names = 20
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\LANDPAT.NDF (land pattern)
Checking for SM components
checking for SM pads
Opening file = c:\5dx\ndf\7OFD1JL\PADGEOM.NDF (pad geometry)
Checking for TH components
checking for TH pads

About to process board = 5064_8726.7_A
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\CAMERA.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\SURFMAP.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF.
Checking tokens in file c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF.
Could not open c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\COMPONEN.NDF (component)
Number of component names = 738
Number of package names = 51
There are 289 loaded components.
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (board)
BOARD DIMENSIONS:  dx = 11399,  dy = 5874,  dz = 81
```

Screen 3

20220715-005415

FIG. 6C

230d

650

Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\PACKAGE.NDF (package)
Number of pin names = 324
Number of pintype names = 20
Checking for SM components
Checking for TH components
Opening file = c:\5dx\ndf\7OFD1JL\LANDPAT.NDF (land pattern)
Checking for SM components
checking for SM pads
Opening file = c:\5dx\ndf\7OFD1JL\PADGEOM.NDF (pad geometry)
Checking for TH components
checking for TH pads
Removing existing board thickness file c:\5dx\rtf\7OFD1JL\1IRR58FO\BRDTHICK.RTF
Setting pad orientations
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\BOARD.NDF (Board Alignment)
Align 1 is undefined.
Align 2 is undefined.
Align 3 is undefined.
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\CAMERA.NDF (camera index)
Default FG index = 1
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\NOISERED.NDF (noise reduction)
Default noise reduction count = 0
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\EXCLZONE.NDF (exclusion zone)
File c:\5dx\ndf\7OFD1JL\1JSAD8L\EXCLZONE.NDF does not exist.

Setting pad orientations
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (Board Alignment)
Align 1 component/pin = U18 52
Align 2 component/pin = U10 40
Align 3 component/pin = U7 52
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\FOV_DATA.NDF (Fov data)
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\CAMERA.NDF (camera index)
Default FG index = 1
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\NOISERED.NDF (noise reduction)
Default noise reduction count = 0
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\EXCLZONE.NDF (exclusion zone)
File c:\5dx\ndf\7OFD1JL\1JRAC8K\EXCLZONE.NDF does not exist.

Screen 4

FIG. 6D

20021015.0105+15

230e

650

```
About to sort 449 components
About to sort 289 components
Opening file = c:\5dx\ndf\7OFD1JL\ALGSLICE.NDF (sliceHeights)
Creating max subtypes file = c:\5dx\rtf\7OFD1JL\1JRAC8K\ALGO_CFG.RTF
Making views.  Using PAD BASED MERGING.
Making views.  Using PAD BASED MERGING.
alignment view #1 : U18 (52) : U18 (53)
alignment view #2 : U10 (40) : U10 (41)
alignment view #3 : U7 (52) : U7 (53)
Opening file = c:\5dx\ndf\7OFD1JL\1JRAC8K\BOARD.NDF (Thickness Pads)
Sorting views into inspection path
   FOV index = 2, Resolution = 1024 pixels
about to sort 12 views.
number of untwist passes =  2
   FOV index = 3, Resolution = 1024 pixels
about to sort 208 views.
number of untwist passes =  5
Creating sorted joint xref file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SJN_XREF.RTF
Opening file = c:\5dx\ndf\7OFD1JL\1JSAD8L\SURFMAP.NDF (surface map)
Sorting views into inspection path
   FOV index = 1, Resolution = 512 pixels
about to sort 42 views.
number of untwist passes =  3
Number of surface map points = 42
number of lines = 861
Number of lines in array = 861
Done sorting lines
Number of lines in triangles = 114
Number of triangles = 73
Triangle limit angle =  10.0 degrees
Number of processed triangles = 63
Creating slice algs file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SLICEALG.RTF
Creating algorithm file  = c:\5dx\rtf\7OFD1JL\1IRR58FO\ALGOLIST.RTF
Creating view heights file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SLICE_ZS.RTF
creating report file = c:\5dx\rtf\7OFD1JL\1IRR58FO\ALGO_RPT.RTF
creating view file   = c:\5dx\rtf\7OFD1JL\1IRR58FO\VIEWLIST.RTF
creating subview file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SUBVIEWS.RTF
creating joint file  = c:\5dx\rtf\7OFD1JL\1IRR58FO\JOINTLST.RTF
Writing file c:\5dx\rtf\7OFD1JL\1IRR58FO\DEV_LIST.RTF by component
Writing file c:\5dx\rtf\7OFD1JL\1IRR58FO\DEV_LIST.RTF by view
Attempting to open file = c:\5dx\rtf\7OFD1JL\BOARD.RTF
Creating surface map file = c:\5dx\rtf\7OFD1JL\1IRR58FO\SURF_MAP.RTF
```

Screen 5

20210155470A1

FIG. 6E

230f

650

Creating fov cross reference file = c:\5dx\rtf\7OFD1JL\1IRR58FO\FOV_XREF.RTF
Setting RPTCAD Theta: Panel 90
Setting RPTCAD Theta: Board 180
Setting RPTCAD Theta: Final 270
Creating RPTCAD File: c:\5dx\rtf\7OFD1JL\1IRR58FO\RPTCAD.RTF

This is a DOUBLE sided board.

There are 169 views with 1 slice.
There are 51 views with 2 slices.

FOV	#Views	#Slices	#Joints
650.0	12	12	416
800.0	208	259	4314
TOTAL	220	271	4730

Creating alignment joint file = c:\5dx\rtf\7OFD1JL\ALIGNPAD.RTF
Creating alignment view file = c:\5dx\rtf\7OFD1JL\ALIGNVEW.RTF
Creating alignment view index file = c:\5dx\rtf\7OFD1JL\MAT_INFO.RTF
Creating panel file = c:\5dx\rtf\7OFD1JL\PANEL.RTF
CADTRAN: done. 5 warnings. 0 Unused Surface Map Points.

Screen 6

FIG. 6F

20220105041507

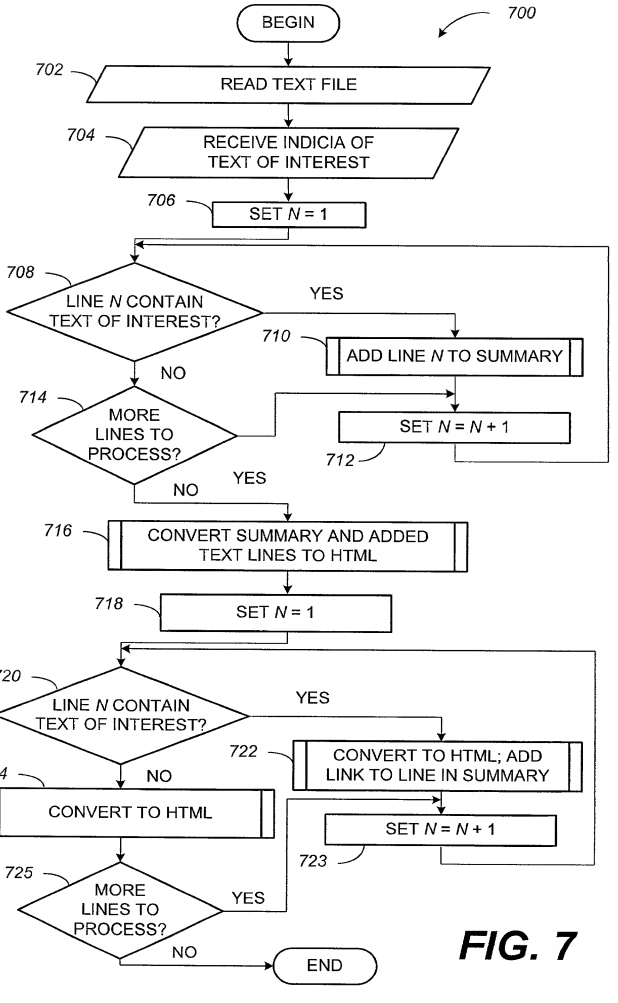

FIG. 7